BY ORDER OF THE COMMANDER AIRLIFT WING

440TH AIRLIFT WING INSTRUCTION 21-101

25 FEBRUARY 2011

Maintenance

CONSOLIDATED TOOL CONTROL PROGRAM

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This publication implements Air Force Policy Directive (AFPD) 21-1, *Air and Space Maintenance* and Air Force Instruction (AFI) 21-101, AFI 21-101 AFRC Sup 1, *Aircraft and Equipment Maintenance Management,* Chapter 10, AFI 11-2C-130, Volume 3, *C-130 Operations Procedures,* Technical Order (T.O.) 32-1-101, *Painting and Preserving Communications-Electronics Equipment*, and AFI 11-301 V1, *Aircrew Life Support (ALS) Program*. It establishes objectives, responsibilities, control and marking requirements for Consolidated Tool Kits (CTK) and equipment. It applies to the 440th Maintenance Group (MXG) and all units assigned, 440th Operations Support Squadron (OSS), Aircrew Flight Equipment (AFE) section and the 2nd Airlift Squadron (AS) and 95th AS. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with (IAW) Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of in accordance with the Air Force Records Disposition Schedule (RDS) located at **https://www.my.af.mil/afrims/afrims/afrims/rims.cfm**. Refer any recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, *Recommendation for Change of Publication*, directly to the 440 MXG/MXQ, Pope Army Air Field NC 28308.

SUMMARY OF CHANGES

This instruction is significantly revised and must be reviewed.

1. Definition. A CTK is defined as tools or equipment stored in a securable controlled area or container. Each tool or piece of equipment in the CTK shall have an assigned location identified by either an inlay cut in the shape of the tool or a shadowed layout. The presence or absence of

any tool or equipment can therefore be readily determined by visually scanning the CTK. The work center supervisor will include the actual location of the tool or equipment on the Master Inventory List (MIL).

2. Responsibilities.

2.1. Supervisors at all levels must ensure personnel assigned to their sections conform to the procedures established in this instruction and other applicable directives. Squadron supervision is responsible for management of the CTK program and will appoint a CTK custodian for each flight/element. The CTK custodian will provide requests for tools to the unit's Government Purchase Card (GPC) holder for procurement.

2.2. 2 AS & 95 AS Aircrew will implement a tool control program for their sections IAW AFI11-2C-130 Vol 3, 440 AW Sup 1.

2.3. AFE section will control their tools IAW AFI 11-301, V1.

2.4. All sections will account for individually issued equipment and Personal Protective Equipment (PPE) using appropriate control measures IAW section 3 of this Airlift Wing Instruction (AWI) and chapter 10 of AFI 21-101.

3. Procedures.

3.1. **CTK/Tool Identification.**

3.1.1. Each tool or separate piece of equipment shall be permanently marked with its CTK designator. As a general rule, smooth uninterrupted surfaces of .125" (1/8th inch) or greater may be legibly marked using standard engraving equipment. To help expedite tool sign out/in, work centers may use a bar-code system to issue/turn-in tools and equipment in accordance with paragraph 3.1.7 of this instruction.

3.1.2. Small tools or items that cannot be marked as described above (such as drill bits, allen wrench sets, apexes, etc) will be stored as a set in a container marked with the CTK designator and the total number of items. The container is counted as one of the items. Work centers will provide a detailed inventory of these small items using one of the following options:

3.1.2.1. The container will include a description of each item (size and quantity), and the MIL will list one set with total number of pieces (including container) OR

3.1.2.2. The MIL will list the container and each item separately. ***NOTE*:** Screwdriver handles will not be used to permanently store apexes but may be used temporarily when more than one apex is required for a specific task. Upon completion of the task, the apexes will be accounted for and returned to their container. Screwdrivers used in this manner must have their caps marked with the CTK designator. Supervisors may opt to permanently seal caps to the screwdrivers.

3.1.3. CTK/Tool identification numbering will comply with the Tool Control/Asset Management (TcMAX) as outlined in AFI 21-101, chapter 10, and will incorporate "V1" as the first two digits of the World Wide Identifier for Pope Army Air Field. A list of Equipment Identification Designators (EID) for 440 MXG work centers is available using the TcMAX system. EIDs must not conflict with another work centers' markings.

3.1.3.1. 440th Aircraft Maintenance Squadron (AMXS) CTKs or equipment will be numbered as "V1FL". The last five digits will be assigned by the tool control organization and will be alpha/numeric to identify the specific CTK or piece of equipment.

3.1.3.2. 440th Maintenance Squadron (MXS) CTKs or equipment will be numbered as "V1" with the next digit's identifying the shop, e.g., GC=Guidance & Control, AG=AGE, AR=Aero Repair, CN=ComNav, EE=ELEN, FS=Fuels, PN=Hydraulics, PM=ISO, PR=Propulsion, SC=SMCO, MXEW=ECM, MT=Metals Tech, and ND=NDI. The remaining digits will be assigned by the tool control organization and will be alpha/numeric to identify the specific CTK or piece of equipment. One minor variation to this format may be necessary to comply with TcMAX requirements when marking items stored on shelves in cabinets. If needed, MXS markings may begin with "V1M", with the next digit identifying the shop code.

3.1.3.3. The Munitions work center will mark their tools/equipment "V1MU", with the remaining digits assigned by the work center to identify the specific CTK or equipment.

3.1.3.4. Tools issued to 440 MXG Quality Assurance (QA) inspectors will be permanently marked with V1QA, plus the individual's five digit employee number. QA also maintains two CTK kits: digital camera kits (V1QAIND01 & V1QAIND02).

3.1.4. AFE shops will develop local tracking procedures to track quantity of serviceable/unserviceable oxygen connectors if dispatched to and from the flight line.

3.1.5. Depot and Contract Field Team personnel are subject to CTK tool control procedures outlined in this instruction. *Exception*: Contractors and Most Efficient Organizations (MEO) are not required to use TcMAX until the contract is renewed and the requirement for using TcMAX is added to the follow-on contract, or the contractor/MEO voluntarily elects to use TcMAX at no additional expense to the government. Tool inventories will be accomplished at the beginning of each shift, prior to departing the job site, and at the end of each shift.

3.1.6. Tools or components that are part of a mock-up or test-set will be marked with the associated equipment CTK designator. Work centers will maintain strict accountability, control and issue of these types of tools and components.

3.1.7. Work centers may affix non-metallic bar code labels on tools and equipment as a means of permanently marking the items as long as the use of the tool and its work environment does not interfere with the adhesion of the label or render the label unreadable. When bar code labels are not a suitable method of permanent marking (e.g., tools too small in size to affix a label to or tools that bar-code labels will not adhere to), a listing of bar codes may be maintained in the tool room and used to issue or turn-in those items. Such items must be permanently marked with the EID by etching or other means. **NOTE**: Prior to using any Laser Etcher, personnel will receive laser safety training from Bioenvironmental Engineering in accordance with AFOSH Standard 48-139, *Laser Radiation Protection Program,* and ANSI Z136.1, *Safe Use of Lasers*.

3.1.8. Issued personal equipment such as ear defenders, communication headsets, reflective belts, etc, will be marked with a TcMAX approved CTK designator that begins

with "V1", shop identifier and ends with alpha-numeric characters that link the items to the responsible individual. Their initial issue is recorded in TcMAX.

3.2. **Tool/Equipment Sign Out/In.** Tools and equipment will be signed out through the central tool room for the assigned work center. MXG employees requesting tools will provide the tool room attendant with their G081 assigned employee number. The tool room attendant will ensure the number provided corresponds with the requestor prior to issuing the tools.

3.3. Locally developed tools and equipment are controlled the same as all other CTK items.

4. Accountability and Control.

4.1. Shop supervisors will account for all CTKs, tools and dispatchable equipment at the beginning and end of each shift. Separate shift inventories must be documented by both outgoing and incoming personnel. CTKs present during tool room shift inventories do not need to be opened for inventory. Beginning/end of shift inventories must be documented in TcMAX.

4.2. Tools and/or equipment will not be issued or turned in without a physical inventory of the kit to ensure each item is accounted for. The tool room attendant and the person signing out/in the tools or equipment are equally responsible for ensuring all items are accounted for. Each tool kit will include a copy of the MIL (TcMAX generated product).

4.3. Each CTK or piece of equipment must have a designated location for inventory and accountability. When TcMAX is not available, accountability inventories will be documented at the beginning and end of each shift using AFRC Form 177, *Consolidated Tool Kit Inventory and Control Log*. Completed forms will be maintained for a minimum of 30 days after the last entry. Work center supervisors will ensure a semi-annual inventory of all tools and equipment is accomplished and documented.

4.4. Tool kit accountability inventories must be accomplished prior to sign-out; prior to securing a panel over an area in which a tool was used; prior to operating aircraft or equipment when maintenance actions were performed (e.g., engine run, landing gear retraction, flight control operation); at the end of a task (at the job site); and during sign-in.

4.5. When mission needs dictate the transfer of tools/equipment at the job site, the losing and gaining individuals will be equally responsible for ensuring positive tool control and accountability. The losing and gaining individuals will each inventory the tools/equipment being transferred. The inventory and transfer will be documented on an AF Form 1297, *Temporary Issue Receipt*, or automated TcMAX product. Both individuals will sign the form certifying that all tools/equipment are accounted for. The losing individual will turn in the form to the tool room attendant prior to the end of their shift. The tool room attendant will then reassign possession in TcMAX to the gaining individual.

4.6. When only one person is assigned to a shift/work center, the individual will request a responsible person from a nearby work center to assist in the inventory and sign in/out of tools and equipment.

4.7. When tool kits are signed out for use in TDY locations (TcMAX not available), the individual responsible for the tools will accomplish a daily inventory. This inventory will be documented on AFRC Form 177 or approved equivalent form included in the kit. This

requirement applies to tool kits issued to Mission Essential Personnel (MEP). If only one MEP is assigned to the mission, he or she will request a crew member to verify the contents of the kit and sign the form.

4.8. The TcMAX database will be backed up at least once every 30 days. TcMAX transaction and inspection history will be maintained for 2 years. Manual documentation will be maintained for 30 days unless otherwise specified.

4.9. Tools or equipment that are missing or removed will be documented in TcMAX and on all copies of the MIL. AFRC Form 175, *Missing/Removed Tools and Equipment*, or TcMAX equivalent form will be placed in the tool kit for use in areas where TcMAX is not available. Remove the EID from broken/removed tools with the exception of warranty tools where removal of the EID would void the tool warranty.

4.10. Crash Damaged or Disabled Aircraft Recovery (CDDAR) CTK will be controlled IAW this instruction.

4.11. Replacement tools (including expendable/consumable items such as apexes, drill bits, etc.) will be controlled by the work center supervisor. Broken tools will be documented in TcMAX and exchanged on a one-for-one basis by the supervisor or their designated representative. Work centers may not stock more than a 30-day supply of replacement items. An inventory of all replacement stock will be accomplished and documented quarterly.

4.12. Wiping rags will be positively controlled as a CTK issue/turn-in item. Work centers will determine quantity limits to be issued. (The quantity of rags turned-in shall equal the quantity signed-out.)

4.13. Broken/unserviceable tools covered by warranty will be controlled by the work center supervisor until replaced. Each broken/unserviceable tool will be annotated on an inventory control log which will be controlled by the work center supervisor. The supplier and/or manufacturer will exchange broken/unserviceable tools under warranty on a one-for-one basis.

4.14. Hazardous Materials (HAZMAT) will be procured in accordance with local instructions. HAZMAT stored in the work center will be controlled by the work center supervisor. HAZMAT included in a CTK will be controlled by the user. The user will ensure HAZMAT is used in a manner consistent with applicable directives and in accordance with the Material Safety Data Sheet.

5. Inventory List (MIL). Supervisors will use TcMAX to maintain master inventory lists for each tool kit assigned. The flight/section chief will maintain a signed copy of the MIL for each type of CTK. The MIL describes the characteristics, quantity and location for each item assigned to the kit (e.g., Drawer 1; ¼" drive x ½" 6-point socket; QTY = 1). Consumables such as safety wire, adhesives, wire bundle lacing, solder, etc., will be identified as consumables on the MIL. The inventory list will indicate the location of items assigned to the kit that are sub-located elsewhere.

6. Foreign Object Damage (FOD) Control. FOD bags will be attached to each dispatchable CTK. Prior to turning in dispatchable CTKs, ensure FOD bags are emptied. Non-dispatchable containers/CTKs that remain in a shop environment, where permanent FOD containers are available, do not require a FOD bag.

7. Unserviceable Tools. Work center supervisors will ensure that all unserviceable tools are repaired or replaced in a timely manner. Tool boxes with unserviceable tools may be dispatched provided the unserviceable tools are removed and properly documented. Unserviceable, non-repairable tools will be secured and accounted for until processed for disposal or turn-in. Tools being disposed of or turned in will have the CTK designator and bar-coding identification removed with the exception of warranty tools where removal of the EID would void the tool warranty.

8. Security. The work center supervisor is responsible for storing and securing CTKs/equipment. Kits and CTK storage areas will be kept locked when not in use or left unattended.

9. Lost Tool/Object Procedures.

9.1. The lost tool procedures outlined in AFI 21-101 AFRC Sup 1, Chapter 10, are supplemented as follows: Only individuals designated by 440 MXG/CC can clear the Red X. These individuals must be certified in GO81 course code, INSP 000145. If the missing item is found, a maintenance supervisor, certified in course code INSP 000707 may clear the Red X. A copy of the Lost Tool Report will be forwarded to the 440 MXG/QA.

9.2. In the event that a tool/item is discovered missing after an aircraft has taxied, but before takeoff, the individual making the discovery will immediately notify the production superintendent. The Production Superintendent will immediately contact Maintenance Operations Center (MOC) and 440 MXG/QA. MOC will in-turn contact Command Post (CP) and request that the aircraft return to parking so that a search for the lost tool/item may be conducted.

9.3. If a tool/item is discovered missing after the aircraft has taken off, the individual making the discovery will immediately notify the production superintendent. The production superintendent will assess the situation based on the last known location of the tool. The Pro Superintendent will immediately pass along all known information to MOC and 440 MXG/QA. MOC will immediately pass all pertinent information to the CP and in-turn the Aircraft Commander (AC). If there is any potential for the item to cause safety of flight concerns, the MOC will relay the information to the CP and request that the aircraft land immediately if it is in the local area. If the aircraft is out of the immediate area the AC will make the determination where to land.

9.4. If a tool/item is discovered missing, off station, the MEP or flight crew will enter a Red X in the aircraft forms and inform the AC of the situation. If at a C-130 support base, the aircrew will inform the local MOC and QA of the condition. The MEP or flight crew will immediately perform a lost tool/item inspection. If the tool/item is recovered, the MEP or flight crew will clear the Red X in accordance with TO 00-20-1. If the tool/item cannot be recovered the AC will coordinate, through the Duty Officer (DO), with the 440 MXG/CC to determine the procedures to be followed.

9.5. When any tool or item is determined or suspected to be missing on or near energized workbenches or machinery, the equipment will be locked out/tagged out. A Red-X discrepancy will be placed in the equipment forms describing the type of tool/item, and the probable area where the tool/item was lost. An AFRC Form 174, *Lost Tool/Object Report*, or TcMAX generated form, will be initiated. The work center supervisor, Flight Chief,

Maintenance Superintendent and 440 MXG/QA will be notified as soon as possible. The work center supervisor will direct personnel to conduct a search for the missing tool/item. If the tool/item cannot be found, the flight chief will determine what further action is necessary.

10. Adopted Forms.

AF Form 847, *Recommendation for Change of Publication*

AF Form 1297, *Temporary Issue Receipt*

AFRC Form 174, *Lost Tool/Object Report*

AFRC Form 175, *Missing/Removed Tools and Equipment*

AFRC Form 177, *Consolidated Tool Kit Inventory and Control Log*

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Commander

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORT INFORMATION

References

AFI 11-2C-130 V3, *C-130 Operations Procedures,* 8 Dec 2009

AFI 11-301 V1, *Aircrew Flight Equipment (AFE) Program,* 25 Feb 2009

AFI 21-101 AFRC Sup 1, *Aircraft and Equipment Maintenance Management,* 13 Jan 2011

AFMAN 33-363, *Management of Records,* 1 Mar 2008

ANSI Z136.1, *Safe Use of Lasers,* 2007

AFOSH Standard 48-139, *Laser Radiation Protection Program,* 10 Dec 1999

AFPD 21-1, *Air and Space Maintenance*, 25 Feb 2003

Tech Order 32-1-101, *Painting and Preserving Communications-Electronics Equipment,* 20 Aug 2009

Abbreviations and Acronyms

AAF— Army Air Field

AC— Aircraft Commander

AFE— Aircrew Flight Equipment

AFI— Air Force Instruction

AFMAN— Air Force Manual

AFOSH— Air Force Occupational and Environmental Safety, Fire Protection, and Health

AFPD— Air Force Policy Directive

AFRC— Air Force Reserve Command

ALS— Aircrew Life Support

AMXS— Aircraft Maintenance Squadron

ANSI— American National Standards Institute

AS— Airlift Squadron

AWI— Airlift Wing Instruction

CC— Commander

CDDAR— Crash Damaged or Disabled Aircraft Recovery

CP— Command Post

CTK— Consolidated Tool Kits

DO— Duty Officer

EID— Equipment Identification Designators

FOD— Foreign Object Damage

HAZMAT— Hazardous Materials

IAW— In Accordance With

MEO— Most Efficient Organizations

MEP— Mission Essential Personnel

MIL— Master Inventory List

MOC— Maintenance Operations Center

MXG— Maintenance Group

MXS— Maintenance Squadron

OPR— Office of Primary Responsibility

OSS— Operations Support Squadron

PPE— Personal Protective Equipment

QA— Quality Assurance

RDS— Records Disposition Schedule

TcMAX— Tool Control/Asset Management

T.O.— Technical Order